

I claim:

1. A scintillator for an electron microscope comprising:

a disc shaped substrate of optically clear material having a first surface and a second surface facing oppositely to said first surface, and a side wall portion forming an edge of said disc;

an indium tin oxide coating on said first surface having an outer surface on a side thereof opposite to that engaging said substrate;

an electrically conductive retaining ring having opposite ends and a non-oxidizing exterior around said wall of said substrate;

a radially inwardly extending lip on one end of said ring overlying an outer edge portion of said outer surface on said indium tin oxide coating and forming a central opening in said one end of said ring;

an electrically conductive adhesive means between and connecting said overlying lip and said outer edge portion of said indium tin oxide coating;

a scintillator material electrically

conductively connected to said outer surface on said indium tin oxide coating and extending through said central opening in said one end of said ring; and

an outer surface on said scintillator material opposite to the surface thereof engaging said indium tin oxide coating.

2. The scintillator claimed in Claim 1, wherein:

said retaining ring comprises solid gold;

said substrate comprises quartz; and

said scintillator material comprises phosphor.

3. The scintillator claimed in Claim 2 wherein:

said indium tin oxide coating has a thickness of 100 to 1000 angstrom; and

said adhesive means comprises silver solder.

4. The method of making a scintillator for an electron microscope comprising:

providing a disc shaped substrate of optically clear material having a first surface, a second oppositely facing surface, and an outer edge side wall;

applying a coating of indium tin oxide on said first surface of said substrate by sputtering;

providing a retaining ring having a non-oxidizing surface, an internal size to fit in close contacting engagement with said side wall of said substrate, and a radially inwardly extending lip on one end;

applying electrical conducting adhesive means on at least the radially outer edge portion of the exposed surface of said indium tin oxide coating;

fitting said retaining ring onto said substrate in close contacting engagement with said side wall of said substrate and said lip overlying in close contacting engagement with said radially outer edge portion of said indium tin oxide coating having said adhesive means thereon to bond said ring to said coating and said substrate; and

depositing scintillation material onto and in bonding relationship with said exposed surface of said coating.